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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,037	09/11/2002	Djamschid Amirzadeh-Asl	DNAG 226 - PFF/JRC	9584

7590

10/18/2005

Fulbright & Jaworski
666 Fifth Avenue
New York, NY 10103

EXAMINER

VINCENT, SEAN E

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/980,037	Applicant(s) AMIRZADEH-ASL ET AL.	
	Examiner Sean E. Vincent	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 9-15 is/are rejected.
- 7) ☒ Claim(s) 16 and 17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fritz et al (CA 2129407) in view of Amirzadeh-Asl et al (DE 4419816).
4. Fritz et al taught methods of producing foamed slag in an arc furnace by blowing oxygen gas and carbon solid particles into the slag to envelop the electric arc (see figures, page 4, line 24 to page 5, line 11; page 7 lines 1-26 and the abstract). Fritz et al disclosed the blown particles to also include ore, filter dusts, scales and sludge. Figure 1 of Fritz et al appears to illustrate blowing into the boundary layer or a zone adjacent to the boundary layer and incorporated control means to control the height of the foamed slag.
5. Fritz et al did not disclose the blowing of solid particles containing titanium into the slag. Amirzadeh-Asl et al disclosed a titanium-bearing slagging agent containing titania, silica, magnesia, calcia, iron oxide and alumina (see col. 4 and the English language abstract, also the

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English language translation, claim 11). Amirzadeh-Asl et al specifically noted that certain residues from the manufacture of titanium dioxide were effective substitutes for natural ilmenite used in metallurgical processes. It would have been obvious for a person of ordinary skill in the art to include the titanium-bearing agent of Amirzadeh-Asl et al in the dust/scale/sludge additions of Fritz et al because Amirzadeh-Asl et al taught that such agents were effective replacements for natural titanium-bearing slagging agents and known to increase the durability of the refractory lining of a furnace.

6. With regard to the particle size distribution (mean particle size or d_{50}) limitations, it is noted that particle size distributions are easily and economically manipulated by sieving and/or remixing and combining steps. Moreover, the claimed mean particle size of .001 to 1mm is a very broad range from which many prepared particle mixtures could be chosen by a person of ordinary skill in the art without the need for a manipulation of the particle size distribution. Furthermore, in the present context of particle blowing, it would not have required undue experimentation to determine an optimal particle size distribution for the particular lance or blowing apparatus available for use. Therefore, it would have been obvious to choose a mean particle size of .001 to 1mm for the titanium carrier included in the particle blowing of Fritz et al and Amirzadeh-Asl et al.

Allowable Subject Matter

7. Claims 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach or fairly suggest the use of pure titanium dioxide as the titanium carrier in the method as claimed. Amirzadeh-Asl et al used titanium bearing agents which would have otherwise been discarded as waste. It would not have been obvious to use pure titanium dioxide because it would have been expensive.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

10. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

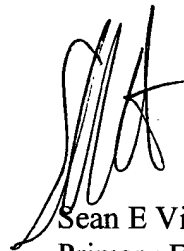
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E. Vincent whose telephone number is (571) 272-1194.

The examiner can normally be reached on M - F (8:30 - 6:00).

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12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'SE Vincent', with a stylized flourish at the end.

Sean E Vincent
Primary Examiner
Art Unit 1731

S Vincent
October 14, 2005